How to make LSD

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Any typos are YOUR problem
For informational purposes only
I take NO responsibility for YOUR actions
Be careful --Ed.]

NOTE: the techniques described herein are potentially dangerous. It is highly recommended that the physical and chemical properties of the reagents used and the reactions employed be given further study by persons unfamiliar with them. For the layman to attempt these procedures without first thoroughly preparing himself is to invite almost certain disaster. The publishers therefore disclaim responsibility for any damage or injury resulting from the improper handling of the chemicals and techniques described, and strongly urge all persons unqualified to perform the reactions to use extraction rather than synthesis.

#1: Kitchen chemistry

Extraction of LSA (Lysergic acid amide)

from Morning Glory (Ipomosea Purpurea) seeds

or Hawaiian Baby Wood Rose (Argyreia Nervosa) seeds

NOTE: Morning Glory seeds may be coated with a toxic chemical by the seed company in order to prevent ingestion. If a packet of seeds contains coated seeds this fact should be stated on the container. Soaking the seeds in warm water for 1/2 hour and rinsing in a strainer should remove this coating.

NOTE: while many varieties of morning glory contain the active LSA (Lysergic acid amide), the yield varies greatly. Therefore, use only Pearly Gates, Wedding Bells, and Heavenly Blue varieties for best results.

Kitchen chemistry follows.

Materials: blender, funnel, filter paper, petroleum ether or lighter fluid, methanol (wood alcohol), glass jar, Pyrex baking dish

Grind Morning Glory or Hawaiian Baby Wood Rose seeds in a

blender until they are a fine powder, and spread them out to dry.

Soak the powder with lighter fluid or petroleum ether. Cap the container to avoid fumes, and don't smoke nearby, or you'll be very sorry.

In a well-ventilated area (neither ether nor lighter fluid are good for you), filter the solution through filter paper in a funnel. Discard the filtrate (the liquid).

Dry mash completely.

Soak mash in methanol (wood alcohol) for 2 days. Be careful

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its vapors are poisonous and may be explosive.

Filter, and save the filtrate.

Soak the mash in methanol again a further 2 days.

Filter. Discard the mash, save the filtrate.

Pour both filtrates into a large, flat dish and evaporate in the absence of direct sunlight. Sunlight will break down the LSA. Preferably, perform ALL procedures in a cool, well-ventilated place away from sunlight.

After evaporation, a yellow gum will remain in the dish. Scrape it up.

To dose on the LSA, add some harmless filler (starch, flour, milk sugar) to the gum until it is not sticky. Put in gelatin capsules or take as is. 30 g Morning Glory seeds or 15 Hawaiian Baby Woodrose seeds should make a goodly trip, so adjust dosage accordingly.

If you want to turn LSA into LSD, you can [see below], but it's MUCH more difficult and VERY unsafe.

#2: Extraction of Lysergic Acid Amides

Start with domestic Morning Glory seeds, the young seeds of the Hawaiian Baby Wood Rose, cultured ergot or naturally occurring ergot compounds.

NOTE: Morning Glory seeds may be coated with a toxic chemical by the seed company in order to prevent ingestion. If a packet of seeds contains coated seeds this fact should be stated on the container. Soaking the seeds in warm water for 1/2 hour and

rinsing in a strainer should remove this coating.

NOTE: while many varieties of morning glory contain the active LSA (Lysergic acid amide), the yield varies greatly. Therefore, use only Pearly Gates, Wedding Bells, and Heavenly Blue varieties for best results.

Reduce seed material to a fine powder in a blender, and spread it out to dry. Grind again if not fine enough after the first time due to dampness.

Saturate powdered seed material with lighter fluid, naphtha or ligroine. When completely saturated, it should have the consistency of soup.

Pour into a chromatography column and let it sit overnight.

Remove the fatty oils from the material by dripping the solvent through the column slowly, and testing the liquid that comes through for fats by evaporating a drop on clean glass until it leaves no greasy film. (It should take several ounces of solvent for each ounce of seeds).

Mix 9 volumes of chloroform with 1 volume of concentrated ammonium hydroxide and shake in a separatory funnel. When it settles, the chloroform layer will be on the bottom. Drain

the chloroform layer and discard the top layer.

Drip the chloroform wash through the column and save the extract. test continuously by evaporating a drop on clean glass until it ceases to fluoresce.

[It is NOT explicit in the source, but if extracting from ergot, I would start with the ergot alkaloid base at this point. --Ed.]

Evaporate the chloroform extracts, and dissolve the residue in the minimum amount of a 3% tartaric acid solution. If all the residue doesn't dissolve, place it into suspension by shaking vigorously.

Color the solution with an acid base indicator, and titrate to find the approximate number of moles of the alkaloid present.

Transfer the solution to a separatory funnel, and wash the other vessel with acid in order to get all the alkaloid out. Pour the washings in the funnel also.

Bring the pH up to make the solution basic by adding sodium bicarbonate solution, and add an equal volume of chloroform.

Shake thoroughly, let it settle, remove the bottom layer and set aside.

Again add an equal portion of chloroform, shake, let settle and remove bottom layer.

Combine chloroform extracts (bottom layers) and evaporate.

The residue remaining after evaporation is a semi-pure concentrate of LSA (lysergic acid amide). The amide requires some experimentation for dosage, but 1 mg of the concentrate is a reasonable starting point. 1 mg LSA will produce effects comparable to 100 micrograms of LSD.

#3: Ergot culture

NOTE: contact with ergot compounds can be dangerous. Only after a basic understanding of the techniques employed in the handling of dangerous or poisonous organisms is reached should one proceed with the culture of ergot.

The need for absolute sterility cannot be overstressed. Consult any elementary text on bacteriology for the correct equipment and procedures. Avoid prolonged contact with ergot compounds, as they are poisonous and can be fatal.

A) Get a source for Claviceps Purpurea fungus

If no source can be found, you can make a field trip to obtain it from rye or other cereal grasses. Rye grass is the best choice. The ergot will appear as a blackish growth on the tops of the rye where the seeds are. They are approximately the same shape as the seeds and are referred to as "heads" or "ergot". From these heads or ergot sprout the Claviceps Purpurea fungi.

They have long stems and bulbous heads when viewed under a strong glass or microscope. It is these that must be removed from the ergot, free from contamination, and used to inoculate the culture material.

B) Make a culture medium

Combine the following ingredients in about 500 ml distilled water in a 2 L small-neck flask:

Sucrose	100 g

Chick pea meal	50 g
Calcium nitrate	1 g
$Ca(NO_3)_2$	
Monopotassium phosphate	0.25 g
KH_2PO_4	
Magnesium sulphate	0.25 g
$MgSO_4$	
Potassium chloride	0.125 g
KCl	
Ferrous sulphate heptahydrate	8.34 mg
$FeSO_47H_20$	
Zinc sulphate heptahydrate	3.44 mg
$ZnSO_47H_20$	

Add water to make up one liter

Adjust to pH 4 with ammonia solution and citric acid

Sterilize by autoclaving

C) Make a culture

Inoculate the sterilized medium with Claviceps Purpurea under sterile conditions, stopper with sterilized cotton and

incubate for two weeks, periodically testing and maintaining pH 4. After two weeks a surface culture can be seen on the medium. Large-scale production of the fungus can now begin.

D) Large-scale production

Obtain several ordinary 1 gallon jugs.

Place a two-hole stopper in the necks of the jugs.

Fit a short (6 inch) tube in one hole, leaving two inches above the stopper. Fit a short rubber tube to this. Fill a small (500 ml) Erlenmeyer flask with a dilute solution of sodium hypochlorite (NaClO). Extend a glass tube from the rubber so the end is immersed in the hypochlorite.

Fit a long glass tube in the other stopper hole. It must reach near the bottom of the jug and have about two inches showing above the stopper. Attach a rubber tube to the glass tube and fit a short glass tube to the end of the rubber tube.

Fill a large glass tube (1" x 6") with sterile cotton and fit one-hole stoppers in the ends. Fit the small glass tube in the end of the rubber tube into one stopper of the large tube.

Fit another small glass tube into the other stopper. A rubber tube is connected to this and attached to small air pump (obtained from a tropical fish store).

With this aeration equipment you can assure a supply of clean air to the Claviceps Purpurea fungus while maintaining a sterile environment inside the solution.

Dismantle the aerators. Place all the glass tubes, rubber tubes, stoppers and cotton in a paper bag, seal tightly with wire staples and sterilize in an autoclave.

Fill the 1-gallon jugs 2/3 to 3/4 full with the culture medium and autoclave.

While these things are being sterilized, homogenize in a blender the culture already obtained and use it to inoculate the material in the gallon jugs. The blender must be sterile.

EVERYTHING must be sterile.

Assemble the aerators. Start the pumps. A slow bubbling in each jug will provide enough oxygen to the cultures. A single pump may be connected to several filters.

Let everything sit at room temperature (25 C) in a dark place (never expose ergot alkaloids to bright light - they will decompose) for a period of ten days.

After ten days, adjust the culture to 1% ethanol using 95% ethanol under sterile conditions. Maintain growth for another two weeks.

E) Extract ergot alkaloids

After a total of 24 days growth period, the culture should be considered mature. Make the culture acidic with tartaric acid and homogenize in a blender for one hour.

Adjust to pH 9 with ammonium hydroxide and extract with benzene or chloroform/iso-butanol mixture.

Extract again with alcoholic tartaric acid and evaporate in a vacuum to dryness.

The dry material is the salt (the tartaric acid salt, the tartrate) of the ergot alkaloids, and is stored in this form because the free basic material is too unstable and decomposes readily in the presence of light, heat, moisture, and air.

To recover the free base for extraction of the amide or synthesis to LSD, make the tartrate basic with ammonia to pH 9, extract with chloroform, and evaporate in vacuo.

#4: Synthesis of LSD from ergot alkaloids or LSA

(including sections on isomerization, separation, purification & crystallization)

NOTE: the chemicals and reactions described below are potentially dangerous even to an organic chemist in a well-equipped laboratory.

The publishers therefore disclaim responsibility for any damage or injury resulting from the improper handling of the chemicals and techniques described, and strongly urge all persons unqualified to perform the reactions to use instead the comparatively easier, safer ergot culture and LSA extraction process.

A) Synthesis of LSD

(iso- & dextro-lysergic acid diethylamide)

PREPARATORY: obtain one red and one yellow photographic safety light and one weak, long-wave ultraviolet light. These are used to prevent the hydrolysis of lysergic acid compounds.

NOTE: Aluminum foil must be used to cover the chemicals when light is present. Rubber gloves must be worn; these compounds are extremely poisonous.

[The source implies but does not state that one may replace "ergot alkaloid" in the following with the seed-derived semi-pure LSA concentrate from #2. --Ed.]

USING YELLOW LIGHT:

Place one volume of ergot alkaloid in a small roundbottom flask. Add 2 volumes of anhydrous hydrazine and reflux for 30 minutes, or the mixture may be heated in a sealed tube at 112 Celsius for 30 minutes. If the reflux technique is used, maintain atmospheric pressure by using an open container or fractionating column.

After heating/refluxing, add 1.5 volumes of water to the mixture and boil gently for 15 minutes. After boiling is complete, cool the mixture in a refrigerator until solidification. The solid material obtained is iso-lysergic

acid hydrazide.

USING RED LIGHT:

Chill all chemicals (reagents) to be used to 0 Celsius. Place an open flask in an ice bath. Add 100 ml concentrated hydrochloric acid (chilled to 0 C).

Quickly add 2.82 g of the lysergic acid hydrazide to the hydrochloric acid, being careful to maintain a temperature of 0 Celsius.

Add 100 ml of a 0.1 N (1/10th Normal) solution of sodium nitrite (chilled to 0 C) and stir vigorously for 3 minutes.

Continue stirring at 0 Celsius and add dropwise 130 ml of the hydrochloric acid.

When the acid addition is complete, continue stirring for 5 minutes, then neutralize the solution with sodium bicarbonate, using a saturated water solution of the bicarbonate.

Extract the solution with ether, remove the water layer, and dissolve the gummy substance in ether. Add this to the ether layer.

Add 3 g of diethylamine for every 30 ml of the ether extract.

Let this stand in the dark, and gradually warm up to 20 Celsius for at least 24 hours.

Evaporate this solution in a vacuum.

The material remaining is a mixture of the inactive iso-lysergic acid diethylamide and the active lysergic acid diethylamide (LSD-25). The inactive isomer must now be converted (isomerized) to the active isomer to greatly increase the yield, since the inactive compound predominates in this synthesis.

B) Isomerization of iso-LSD into the active LSD-25

USING THE RED LIGHT:

Dissolve the synthesized material into the minimum amount of ethyl alcohol.

Mix a 4 Normal solution of potassium hydroxide in ethanol. The amount of solution needed is twice the volume of the iso-LSD/ethanol solution.

Add the two solutions together and let the mixture sit for 4 hours at room temperature.

Neutralize the mixture with dilute hydrochloric acid, then make it slightly basic with ammonium hydroxide.

Extract the mixture with chloroform, sparate the chloroform layer, and extract this four times with a 25% volume of water.

Evaporate the chloroform in a vacuum. Discard the water extracts. The material left after evaporation a mixture of iso-LSD and LSD-25, the active LSD predominating.

The mixture may now be separated by chromatography and the iso-LSD again isomerized by the above process.

C) Separation, purification & crystallization of LSD-25

USING A DARKROOM:

The material obtained from the isomerization process is now dissolved in a solution prepared from 3 parts benzene/1 part chloroform. Use 50 ml solvent per 1 gram LSD material.

Mix a slurry basic alumina in benzene. Pack it into a 1 inch chromatoghraphy column until it fills 6 inches.

When the slurry settles, drain the benzene/chloroform down to the level of the basic alumina, and carefully add an equal amount of the LSD/solvent solution.

USING A WEAK, LONG-WAVE ULTRAVIOLET LIGHT:
(to follow the blue band only)

Drain the solution through the column. The fastest-moving, blue fluorescent band contains the LSD-25. Collect this fraction and evaporate in a vacuum. The syrup remaining will crystallize spontaneously, but slowly. Do not heat.

Use the UV light only whe necessary to follow the blue band in order to avoid decomposition of the compounds.

Dissolve the syrup or crystal in tartaric acid solution and recrystallize to form the stable end-product (dextro lysergic acid diethylamide tartrate).

The material remaining in the column may be removed with methanol, evaporated in a vacuum, and recycled through the isomerization and subsequent procedures by itself or combined with fresh material.

Also, all leftover solutions and residues may be neutralized with socium bicarbonate, evaporated in vacuo, and extracted with ammoniacal chloroform, the extract evaporated to dryness, and the residue reused.

#5: Preparation of lysergic acid from the amide

NOTE: this synthesis is as difficult and dangerous as the rest, and is of use only if using one of the following two LSD synthesis methods, which require lysergic acid as the starting compound. The lysergic acid amide obtained from the extract of ergot or seeds need not be converted to the acid prior to its use in the synthesis of LSD providing that the synthesis used is #4 given above, and giving the starting material "ergot alkaloid".

Dissolve 10 g lysergic acid amide in 200 ml methanolic potassium hydroxide solution.

Remove the methanol by vacuum as soon as the amide is dissolved.

Dissolve the residue which is left into 200 ml of an 8% solution of potassium hydroxide in water.

Heat this mixture on a steam bath for 1 hour.

Pass a steam of nitrogen gas through the flask during the heating process. (The ammonia which is evolved in the gas stream may be titrated with hydrochloric acid in order to follow the reaction.)

Neutralize the mixture with tartaric acid (neutral to congo red) and run it through a filter paper.

Extract the mixture with ether in a separatory funnel. Save the water layer, discard the ether layer.

Filter the solution through a filter paper and evaporate.

Upon evaporation, dry crystals of lysergic acid will be obtained.

#6: Synthesis of LSD

using lysergic acid

the quickest way to make pure LSD-25

PREPARATORY: see #4

NOTE: The chemicals and techniques described are potentially dangerous. It is highly recommended that the physical and chemical properties of the reagents used be studied by those persons unfamiliar with them before the synthesis is attempted.

USING THE YELLOW LIGHT:

5.36 g of d-lysergic acid are suspended in 125 ml acetonitrile, and the suspension is cooled to about -20 Celsius in a bath of acetone cooled with dry ice.

To the suspension is added a cold (-20 C) solution of 8.82 g of trifluoracetic anhydride in 75 ml acetonitrile. The mixture is allowed to stand at -20 C for about 1 1/2 (one and one-half) hours.

(During this time the suspended material dissolves and the d-lysergic acid id converted to the mixed anhydride of lysergic and trifluoracetic acids.)

The mixed anhydride can be separated in the form of an oil by evaporating the solvent in vacuo at a temperature below about 0 Celsius.

Everything must be kept anhydrous.

USING THE RED LIGHT:

The solution of mixed anhydrides in acetonitrile from above is added to 150 ml of acetonitrile containing 7.6 g of diethylamine.

The mixture is held in the dark at room temperature for about 2 hours.

The acetonitrile is evaporated in vacuo, leaving a residue of LSD-25 plus impurities.

The residue is dissolved in 150 ml of chloroform and 20 ml of ice water.

The chloroform layer is removed and the aqueous layer is extracted with several portions of chloroform. The chloroform portions are are combined and, in turn, washed with four 50 ml portions of ice-cold water.

The chloroform solution is then dried over anhydrous sodium sulfate and evaporated in vacuo.

NOTE: following the completion of this synthesis, follow the procedures described for separation, purification, and crystallization of LSD-25. If a higher yield is desired, follow the procedure on isomerization after doing the separation, purification, and crystallization.

#7: Synthesis of LSD

using lysergic acid

high-yielding and fast

PREPARATORY: see #4

NOTE: The chemicals and techniques described are potentially dangerous. It is highly recommended that the physical and chemical properties of the reagents used be studied by those persons unfamiliar with them before the synthesis is attempted.

NOTE: the following procedure gives good yield and is very fast, with little iso-lysergic acid being produced. However, the stoichiometry must be exact or yields will drop

USING WHITE LIGHT:

Sulfur trioxide is produced in an anhydrous state by carefully decomposing anhydrous ferric sulfate at approximately 480 Celsius. Store under anhydrous conditions.

USING WHITE LIGHT:

A carefully-dried 22 liter RB flask fitted with an ice bath, dropping funnel, and mechanical stirrer is charged with 10 to 11 liters of dimethylformamide (freshly distilled under reduced pressure).

The condenser and dropping funnel are both protected against atmospheric moisture.

2 lb. of sulfur trioxide (Sulfan B) are introduced dropwise, very cautiously with stirring, during 4 to 5 hours. The temperature is kept at 0-5 Celsius throughout the addition.

After the addition is complete, the mixture is stirred for 1 to 2 hours until some separated crystalline sulfur trioxide-dimethylformamide complex has dissolved.

The reagent is transferred to an air-tight automatic pipette for convenient dispensing, and kept in the cold. Although the reagent, which is colorless, may change to yellow and red, its efficiency remains unimpaired for three to four months in cold

storage.

An aliquot is dissolved in water and titrated with standard NaOH to a phenolphthalein end point.

USING RED LIGHT:

A solution of 7.15 g of d-lysergic acid monohydrate (25 mmol) and 1.06 g of lithium hydroxide hydrate (25 mmol) in 200 L of MeOH is prepared.

The solvent is distilled on the steam bath under reduced pressure.

The residue of glass-like lithium lysergate is dissolved in 400 ml of anhydrous dimethyl formamide.

From this solution, about 200 ml of the dimethyl formamide is distilled off at 15mm pressure through a 12-inch helices packed column.

The resulting anhydrous solution of lithium lysergate left behind is cooled to 0 Celsius and, with stirring, treated rapidly with 500 ml of SO3DMF solution (1.00 Molar).

The mixture is stirred in the cold for 10 minutes and then

9.14 g (125.0 mmol) of diethylamine is added.

The stirring and cooling are continued for 10 minutes longer, when 400 ml of water is added to decompose the reaction complex.

After mixing thoroughly, 200 ml of saturated aqueous saline solution is added. The amide product is isolated by repeated extraction with 500 ml portions of ethylene dichloride.

The combined extract is dried and then concentrated to a syrup under reduced pressure. Do not heat the syrup during concentration. The LSD may crystallize out, but the crystals and the mother liquor may be chromatographed according to the instructions in the synthesis of LSD #4.

"Raw Data for Raw Nerves"